

Notice of Allowability

Application No.

10/736,894

Examiner

John H. Le

Applicant(s)

PERMUY ET AL

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendment filed 08/02/2005.
2. ☒ The allowed claim(s) is/are 1-5.
3. ☒ The drawings filed on 17 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>08/02/2005</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Response to Amendment

1. Applicant's amendment filed 08/02/2005 has been entered and carefully considered.

Claims 1-5 have been amended.

The new abstract has been submitted.

Reasons for Allowance

2. Claims 1-5 are allowed.
3. The following is a statement of reasons for the indication of allowable subject matter:

Please see the previous office action and applicant's argument filed on 08/02/2005.

Regarding claim 1, none of the prior art of record teaches or suggests the combination of a method of detecting and locating noise sources each emitting a respective signal S_j with $J = 1$ to M , detection being provided by means of acoustic wave or vibration sensors each delivering a respective time-varying electrical signal s_i with i lying in the range 1 to N , wherein the method comprising: taking the time-varying electrical signals delivered by the sensors, each signal $S_i(t)$ delivered by a sensor being the sum of the signals S_j emitted by the noise sources; amplifying and filtering the time-varying electrical signals as taken; digitizing the electrical signals; calculating the functional f , such that:

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$$f(n_1, \dots, n_j, \dots, n_M) = \frac{\det \langle T_k(\omega), T_i^*(\omega) \rangle}{\det \langle T_k(\omega), T_i^*(\omega) \rangle} \quad k, i = 0 \text{ to } M$$

with

$$(T_k(\omega))_i = e^{j\omega \frac{\langle n_k, c_i \rangle}{c}}$$

... being the scalar product;

.. c_i being the vector constructed between the center of gravity of the sensors and the position of sensor i ;

.. n_j being the unit vector in the direction defined by the center of gravity of the sensors and source j ;

.. with $T_0 = s$; and

.. with $c =$ the speed of sound; and

in minimizing the functional f relative to the vectors n_j for $j = 1$ to M in such a manner as to determine the directions n_j of the noise sources, wherein ω is angular frequency, $\langle T_k(\omega), T_i^*(\omega) \rangle$ is the scalar product between $T_k(\omega)$ and $T_i^*(\omega)$, J corresponds to the imaginary number in mathematics. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H Le whose telephone number is 571-272-2275.

The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John H. Le

Patent Examiner-Group 2863

August 12, 2005



MICHAEL NGHIEM
PRIMARY EXAMINER